

CLIPPEDIMAGE= JP401184968A
PAT-NO: JP401184968A
DOCUMENT-IDENTIFIER: JP 01184968 A
TITLE: MANUFACTURE OF LAMINAR PIEZOELECTRIC
ELEMENT

PUBN-DATE: July 24, 1989

INVENTOR-INFORMATION:

NAME

OTSUKI, HIROTO
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ASSIGNEE-INFORMATION:

NAME

HITACHI CHEM CO LTD

COUNTRY

N/A

APPL-NO: JP63010208

APPL-DATE: January 20, 1988

INT-CL_(IPC): H01L041/08

US-CL-CURRENT: 310/311

ABSTRACT:

PURPOSE: To improve in productivity by a method wherein a laminate is built of piezoelectric material sheets and inner electrodes stacked up one upon another alternately, the laminate is subjected to sintering, the edge of every other inner electrode in one side of the laminate is subjected to electrolytic etching for the creation of a groove, and the groove is filled with an

insulating material which serves as an insulating layer.

CONSTITUTION: A green sheet is built of a calcinated piezoelectric material powder composed mainly of lead nickel-niobate and lead titanate, and an AgPd paste to be an inner electrode 2 is applied thereto by screen-printing. About fifty of such are stacked up and bonded into a laminate under a hot press. The laminate is so cut in the direction vertical to the sheets that all the ends of the inner electrodes 2 will be exposed in the sides of the laminate. The product is then subjected to sintering. A process follows wherein provisional outer electrodes 8, 8' are built for the construction of a laminar piezoelectric body 9 of a laminar capacitor type. An electrolytic etching process follows, wherein the end of every other layer attacked in the process is replaced with a groove, in a side wherein inner electrode 2 are exposed. Grooves are formed, similarly, in the other sides. An insulating paste is allowed to flow into the thusformed grooves. The laminar piezoelectric body 9 produced in this way is cut at the provisional outer electrodes 8, 8', which results in a laminar piezoelectric body 9' lacking outer electrodes. A conductive material is applied to insulating layers 3 in the laminar piezoelectric body 9' for the formation of outer electrodes 4.

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DERWENT-ACC-NO: 1995-072336
DERWENT-WEEK: 199510
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TITLE: Surface acoustic wave device for use as filter - has first layer thin film electrode layered on substrate and overlapped by second layer electrode, with migration tolerance and ratio resistance higher for first electrode than for second

PATENT-ASSIGNEE: HITACHI LTD[HITA]

PRIORITY-DATA: 1993JP-0140322 (June 11, 1993)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES
MAIN-IPC			
JP 06350377 A	December 22, 1994	N/A	006
H03H 009/145			

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO
APPL-DATE		
JP06350377A	N/A	1993JP-0140322
1993		June 11,

INT-CL_(IPC): H03H009/145

ABSTRACTED-PUB-NO: JP06350377A

BASIC-ABSTRACT: The surface acoustic wave device has a first layer electrode (13) made of thin film layered on a piezo electric substrate (1). Another layer electrode (14) is layered on the first layer electrode. The first

layer
electrode performs excitation, propagation and reflection of the
surface
acoustic wave.

The migration tolerance and ratio resistance the first layer electrode
are
higher than that of the other layer electrode. The first layer electrode
is
composed of 20% aluminium alloyed with one of the following
materials : Ti, Pb,
Nb, Ni, Mg, Ge, Si, Co, Zn, Ta, Au, Ag, Pt, Cr, Hf, Zr, Cd, Li or Cu.

ADVANTAGE - Provides wide range selection of electrode film
material. Reduces
ratio resistance and element loss. Improves power proof nature.
Gives good
characteristic and increases life time.

CHOSEN-DRAWING: Dwg.1/4

TITLE-TERMS:
SURFACE ACOUSTIC WAVE DEVICE FILTER FIRST LAYER THIN
FILM ELECTRODE LAYER
SUBSTRATE OVERLAP SECOND LAYER ELECTRODE
MIGRATION TOLERANCE RATIO RESISTANCE
HIGH FIRST ELECTRODE SECOND

ADDL-INDEXING-TERMS:
SAW

DERWENT-CLASS: U14 V06

EPI-CODES: U14-G; V06-K02; V06-K04;

SECONDARY-ACC-NO:
Non-CPI Secondary Accession Numbers: N1995-057132

CLIPPEDIMAGE= JP409162682A
PAT-NO: JP409162682A
DOCUMENT-IDENTIFIER: JP 09162682 A
TITLE: PIEZOELECTRIC RESONATOR

PUBN-DATE: June 20, 1997

INVENTOR-INFORMATION:
NAME
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ASSIGNEE-INFORMATION:
NAME COUNTRY
MURATA MFG CO LTD N/A

APPL-NO: JP07317727
APPL-DATE: December 6, 1995

INT-CL_(IPC): H03H009/17; H03H009/05 ; H03H009/13

ABSTRACT:
PROBLEM TO BE SOLVED: To provide the piezoelectric resonator whose Qm value is rescued without caring about migration at a low manufacture cost.

SOLUTION: The piezoelectric resonator 1 is made up of a piezoelectric substrate 2 and vibration electrodes 3 to 5. The vibration electrodes 3 to 5 are made of conductors whose specific resistance is 3×10^{-6} ohm-cm or over. A base metal itself or an alloy whose major component is a base metal hardly causing migration at a low cost is preferred for the conductor. Concretely the

base metal such as Ni, Cu, Cr, Al, Fe, Sn, is a metal group except noble metals
Au, Ag, Pt, Pd or the like and the base metal alloy is a Monel metal consisting
of 70% of Ni and 30% of Cu.

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CLIPPEDIMAGE= JP411186625A
PAT-NO: JP411186625A
DOCUMENT-IDENTIFIER: JP 11186625 A
TITLE: PIEZOELECTRIC ELEMENT

PUBN-DATE: July 9, 1999

INVENTOR-INFORMATION:

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ASSIGNEE-INFORMATION:

NAME	COUNTRY
HITACHI LTD	N/A

APPL-NO: JP09355487
APPL-DATE: December 24, 1997

INT-CL_(IPC): H01L041/083

ABSTRACT:

PROBLEM TO BE SOLVED: To improve the reliability of a piezoelectric element

without increasing the electrode cost of the element.

SOLUTION: A piezoelectric element has a laminated structure which is constructed by alternately laminating piezoelectric layers 10 made of a piezoelectric ceramic (such as lead titanate-lead zirconate, etc.), having a lead-based perovskite structure and inner electrode layers made of silver palladium, etc., upon another. However, a migration-resistant layer 12 made of a migration-resistant ceramic (a piezoelectric ceramic containing no lead) having a weaker piezoelectric property than the piezoelectric layers 10 have is interposed between each piezoelectric layer 10 and each inner electrode layer 11.

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